

16. (Added) A gas opening/closing pin according to claim 1, further comprising an integrally formed washer-shaped boss body portion formed at a lower end of the opening/closing pin .

17. Added) A gas opening/closing pin according to claim 10, further comprising an integrally formed washer-shaped boss body portion formed at a lower end of the opening/closing pin .

18. (Added) A gas opening/closing pin according to claim 14, further comprising an integrally formed washer-shaped boss body portion formed at a lower end of the opening/closing pin.

REMARKS

Claims 1-18 are pending. By this amendment, claims 1 and 3 are amended for the Examiner's consideration. Claims 10-18 are presented for examination to more fully claim the features of the present invention. No new matter has been added. Reconsideration of the rejected claims in view of the above amendments and the following remarks is respectfully requested.

Drawings Objection

The Examiner objected to Figures 1-4 as requiring designations as "Prior Art." A proposed drawing correction is being submitted under a separate document that designates Figures 1-4 as "Prior Art".

Rejections Under 35 U.S.C. §112

The Examiner rejected claims 1-9 under 35 U.S.C. §112, second paragraph, as being indefinite. In particular, in regard to claim 1, the Examiner stated that it was unclear as to which element the boss body or the diameter reducing portion is integrally formed. Applicant has amended claim 1 to more clearly recite that the diameter reducing

portion is integrally formed at an end of the gas opening/closing pin. Applicant now respectfully requests withdrawal of this rejection.

Prior Art Rejections

§102(b) Rejections

Claims 1, 6, and 9 were rejected under 35 U.S.C. §102(b) as being anticipated by DE-19853012 (U.S. Patent 6241316 to Jean et al. as an English equivalent). Claims 1-3 and 9 were rejected under §102(b) over U.S. Patent No. 5154264 to Poertzgen et al. Claims 1-4 and 9 were rejected under U.S.C. 102(b) as being anticipated by US Patent No. 5096029 to Bauer et al. These rejections are moot in view of the above amendments.

The claimed invention is directed to a gas opening and closing pin used in a height regulating body for example, in a chair or a table. In prior art systems, gas opening and closing pins include an annular recess and an insertion boss which is formed at an end portion of the pin, and joined by a separate washer. The washer is provided to prevent the pin from being withdrawn from the interior of the cylinder. However, these mechanisms are quite complex to manufacture and thus add to the manufacturing costs.

The present invention is directed to solving the problems of the prior art. In specific, the present invention includes many novel features which are not shown in the prior art systems. For example, the present invention, in embodiments, includes (i) an integrally formed two stepped diameter reducing portion formed at an upper end of the opening/closing pin and (ii) an integrally formed washer-shaped boss body portion. Both of these features reduce the complexity and accompanying costs of the manufacturing of the pin, while also preventing the pin from being withdrawn from the cylinder. In further embodiments, a single step reducing diameter may be provided, in addition to in further embodiments, an annular recess which may be streamlined. As seen in Figure 9, for example, the streamline is a concavity-like shape about a portion of the circumference of the pin, itself.

In regards to claim 1, the Jean or Poertzgen or Bauer references show

“an integrally formed two stepped diameter reducing portion
formed at an upper end of the opening/closing pin”

In fact, the Jean reference does not even show a diameter reducing portion section. As seen in Figure 13, only a tapered upper portion is shown with no reducing section. A bottom boss is, however, shown. The Examiner does not even appear to direct Applicant's attention to the reducing section other than to say that this reference includes such a feature. This is in comparison to the washer which is positively recited as reference numeral 119f.

As to the Poertzgen reference, this reference shows the conventional cylinder with a single reducing section. This is shown in Figures 2-5. But, this reference still does not show the two step diameter reducing portion formed at the upper end of the pin, which provides many advantages as discussed above. Also, contrary to the Examiner's assertion, Poertzgen et al. nowhere in Figures 1 and 2 shows a "washer-shaped boss body" as part of the opening/closing pin as recited in claim 1 of the present invention. Additionally, Poertzgen et al. does not disclose

"an integrally formed diameter reducing portion at one end of the opening/closing pin in which the diameter is reduced."

A careful review of the Figures in Poertzgen et al. never show this feature. The elements 21 and 421 are disclosed as an "actuating rod" (col. 6, ll. 5-7, col. 7, ll. 29, respectively) and is a separate detached element from the open/closing pin as shown in Figure 7, element 421.

Bauer et al. also shows a conventional system. As seen in Figure 1, for example, the pin does not even include a reducing portion.

Claims 2, 3, 4 and 9 are dependent claims and should be allowable since they depend on an allowable base claim, as discussed above. For the above reasons, the §102(b) rejections should now be withdrawn.

§103(a) Rejections

The Examiner rejected claim 5 under 35 U.S.C. §103(a) as unpatentable over DE-19853012 in view of US Patent 3659573 to Bennett, and also over Poertzgen et al. in view of Bennett, and also over Bauer et al. in view of Bennett. Additionally, claim 7 was rejected under 35 U.S.C. §103(a) over Folarin in view of U.S. Patent 4934749 to Folarin, and also over Poertzgen et al. in view of Folarin, and also Bauer et al. in view of Folarin. Additionally, claim 8 was rejected under 35 U.S.C. §103(a) over Bauer et al in view of U.S. Patent RE. 18,696 to Messier, and also over Poertzgen et al. in view of Messier, and also over Bauer et al. in view of Messier. These rejections are traversed.

In regards to claims 5 and 7 which recite an opening/closing pin made of metal and non-metal, respectively, both of these claims depend from independent claim 1 which Applicant now believes is allowable. Therefore, claim 5 and claim 7 are both directed to proper patentable issues. This same arguments is also applicable to claim 8.

In addition, in order to reject a claim under 35 U.S.C. §103(a), MPEP mandates, in part, that:

To establish a prima facie case of obviousness,...the prior art reference (or references when combined) must teach or suggest all of the claimed limitations.

As discussed below, the prior art references cited by the Examiner do not teach or suggest all of the features of the rejected claim 8. In fact, it appears that the references may even teach away from the claimed invention. In regards to claim 8, the Examiner has attempted to combine teaches of Messier with other references above. The Examiner asserts that Messier teaches in Figure 4 that the pin has a stream-lined-shaped recess in the area of the line associated with element 18. However, Applicants disagree that Figure 4 shows a streamlined-shaped recess as taught by the present invention. Close inspection of element 18 shows an annular-shaped recess, i.e., the recess is around the entire circumference of the pin. The streamlined shape recess of the present invention does not extend to the entire circumference of the opening/closing pin but rather to a portion thereof as clearly shown in Figures 8-13, elements 120a, 130a, 140a, 150a, 160a, and 170a. On page 8, line 13 of the present application is a description of 120a as “formed on one side of the central

portion.” Again on page 8, line 5, in reference to recess 130a, again we see as “formed on one side of the central portion.” Thus, a streamlined recess is a recess formed on one side of the central portion. Figure 10 and 13 shows that more than one streamlined recess can be employed. Nowhere does Messier teach a streamlined recess.

For the above reasons, Applicant submits that all of the features of the claimed invention are not shown in Messier, Poertzgen, De-19853012, and Bauer et al., and accordingly request withdrawal of the §103(a) rejections.

Obvious Type Double Patenting Rejection

The Examiner further rejected claim 1 under the judicially created doctrine of obviousness double patenting over claim 1 of U.S. Patent No. 6,241,316. This rejection is respectfully traversed.

Claim 1 of U.S. Patent No. 6,241,316 is directed to an apparatus for adjusting the height of a swivel chair. The apparatus includes a pin, but there is no structure cited for this pin. There is only a recital of the function of the pin. This being the case, Applicant submits that the claim 1 of the present invention is not obvious in view of claim 1 of U.S. Patent No. 6,241,316. This is simply because claim 1 of the present invention includes many features of the claimed invention such as, for example, the diameter reducing portion and other features, which are not shown in claim 1 of U.S. Patent No. 6,241,316.

Added Claims

Claims 10-17 are added for the Examiner’s consideration. As tot he independently added claims 10 and 14, Applicants again submit that these claims have distinguishable features. By way of example, claim 10 recites, in part,

“...at least one streamlined recess which opens the gas inlet and outlet is formed on the outer peripheral surface of the central portion of the gas opening/closing pin”

None of the references show a streamlined-shaped recess. Some of the references do show an annular shaped recess, but this is different than the streamlined portion. By way of example and referring to Figure 9 of the present application, the streamline portion is a

concavity which is partially about the circumference of the pin, itself. The streamline portion is akin to a cut-out section of the pin. This is much different from the annular recess of some of the references.

Additionally, none of the references appear to show an integrally formed diameter reducing portion having a tapered portion is formed at an upper end of the opening/closing pin. Some of the reference have a tapered portion but this is not included with a diameter reducing portion, which provides some advantages. In addition to the prevention of withdrawal of the pin from the cylinder, it may also assist in the assembly of the entire structure.

The remaining added claims are dependent claims and are in condition for allowance for the reasons set forth above.

Conclusion

Applicants submit that all of the claims are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue. The Examiner is invited to contact the undersigned at the telephone number listed below, if needed. Applicants hereby make a written conditional petition for extension of time, if required. Please charge any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 23-1951.

Respectfully submitted,



Andrew M. Calderon
Registration No 38,093

McGuireWoods, LLP
Suite 1800
1750 Tysons Blvd
McLean, VA 22102
(703) 712-5426

Marked-up Copy of Claims

1. (Amended) A gas opening/closing pin which opens and closes a gas inlet and outlet formed in a pipe holder which seals one end portion of a cylinder and moves the position of a piston in the cylinder, wherein at least one recess which opens the gas inlet and outlet is formed on the outer peripheral surface of the central portion of the gas opening/closing pin and [one of washer-shaped boss body portion and] an integrally formed two stepped diameter reducing portion formed at an upper end of the opening/closing pin [in which the diameter is reduced is integrally formed] .